

# EXHIBIT A

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

JOE ANDREW SALAZAR,	§	
	§	
	§	
<i>Plaintiff,</i>	§	
	§	
vs.	§	Civil Action No. 2:16-cv-01096-JRG-RSP
	§	
HTC CORPORATION	§	JURY TRIAL DEMANDED
	§	
<i>Defendant.</i>	§	

**SUPPLEMENTAL EXPERT REPORT OF ROY A. GRIFFIN III**

**I. INTRODUCTION**

1. My name is Roy A. Griffin, III. I reside at 668 Nenna Ct., El Paso, TX. I have been retained by the law firm of Meredith & Keyhani, PLLC in connection with its representation of Joe Andrew Salazar ("Plaintiff" or "Salazar"), as an expert witness in connection with the above-identified civil action, in the fields of electrical engineering, product and system design, software engineering, software analysis, and security engineering and the subject of matter of the inventions disclosed and claimed in United States patent No. 5,802,467 ("the '467 Patent") (**Exhibit A**).

2. I have been asked to render an opinion as to Defendant HTC Corporation's ("Defendant" or "HTC") infringement of certain claims of the '467 as enumerated below:

Claims 1,2,3,4,5,6,7,10,14,17,23,26,27,28,29,30,31,32 and 34.

3. This report will only address those claims asserted above. However, I reserve the right to supplement this report if Salazar subsequently asserts additional claims.

## II. **QUALIFICATIONS**

4. My qualifications as an expert are set forth in detail in the attached curriculum vitae (**Exhibit B**) but may be summarized as follows:

5. I received a B.S. degree in Electrical Engineering with the computer engineering option in 1981 from the University of Texas at El Paso. I am a Texas Registered Professional Engineer.

6. I have over 30 years of industry experience in electrical engineering, product and system design, software program development, microprocessor based program development, and patent analysis. I am familiar with software and protocols used in communications having designed and analyzed many products that employ or utilize software in their implementation of communications protocols.

7. Over the course of more than 20 years, I have been retained by both plaintiffs and defendants in intellectual property cases and have provided expert testimony in the form of declarations, expert reports, and expert testimony in well over a dozen patent infringement cases. I have been deposed as an expert in patent and intellectual property cases dozens of times, and I have testified as an expert witness in three jury trials in federal district court. I have also testified before the ITC. My consulting and/or testifying expert services have often involved systems that incorporate software, such as cellular telephones, digital set-top boxes, and distributed processing systems such as those found in cable TV and satellite TV systems.

8. I am the co-inventor of five U.S. patents, including several data processing and software related patents including U.S. Patent No. 5,151,938, "Security enhancement in a data processor through use of dynamic parameter authentication," issued September 29, 1992; U.S. Patent No. 5,249,294, "Determination of time of execution of predetermined data processing routing in relation to occurrence of prior externally observable event," issued September 28, 1993.

### **III. PRIOR TESTIMONY**

9. Testimony provided at trial or by deposition within the past five years is provided in my attached curriculum vitae (**Exhibit B**).

### **IV. COMPENSATION**

10. I am being compensated for the time that I spend consulting on this case at a rate of \$400.00 per hour. My compensation is not dependent upon the outcome of this litigation.

### **V. MATERIALS CONSIDERED**

11. In developing my opinions in this case, I reviewed, among other things, the asserted patent and associated prosecution history, court documents produced in this case (including the Court's claim construction opinion and order), the deposition testimony of HTC employee HO CHIA CHU, and documents and software produced by Defendant.

12. I have also relied upon my academic and professional training, and my personal and professional experience and expertise.

13. In reaching my conclusions, I also considered software, product, and applications analysis that I performed or that was performed at my direction by engineer Christopher Byler, tests Mr. Byler and/or I developed and/or performed either independently or together, and reverse engineering analysis and/or tests that we performed either independently or together.

14. I also considered publicly available information, including promotional information, product reviews, videos, and specifications.

15. For a more complete list of the information that I reviewed see footnotes to my claim-element by claim-element infringement analysis set out in **Exhibit C**.

## **VI. SUMMARY OF EXPECTED TESTIMONY**

16. If called as a witness, I expect to provide the Court and jury with an appropriate technical primer relating to the asserted patent, and to provide opinions as to HTC's infringement of this patent.

17. I have read the Court's claim construction opinion and order and have applied the Court's construction in my analysis. To the extent that the Court did not construe a claim term, I used the plain and ordinary meaning of the term as would be understood by one of ordinary skill in the art in the context of the field of the invention at the time of the invention to construe the claim term. Should the Court issue a claim construction ruling that differs from the constructions I used, I reserve the right to amend my analysis regarding Defendant's infringement of the asserted patent.

18. I expect to testify that Defendant infringed the asserted claims of the asserted patent detailed on a claim-element by claim-element basis in **Exhibit C** that demonstrates how the Accused Devices practice the inventions disclosed and claimed in the asserted patent.

19. I reserve the right to amend and/or supplement this report in light of any additional relevant evidence, arguments, or testimony presented, for example, in connection with summary judgment proceedings, or trial on the merits.

## **VII. LEGAL STANDARDS**

### **A. Direct Infringement**

20. I understand that every patent contains a grant from the federal government of the right to exclude others from making, using, offering for sale, or selling claimed inventions throughout the United States or importing the inventions into the United States. I understand that the Patent Act defines infringement and that whoever, without authority, makes, uses, offers to sell, sells, or imports the patented invention within the United States, its territories, or its possessions during the term of the patent, infringes the patent.

21. I also understand that determining direct infringement requires a two-step analysis. First, the claims must be construed, and then the properly construed claim must be compared to what is accused of infringement.

22. I understand that for purposes of infringement, a patented invention is defined by the patent claims and the elements of that claim, as set forth in the numbered paragraphs at the end of an issued patent. In order for infringement to occur, at least one party must make, use, offer to sell, sell, or import each element of at least one claim of the patented invention.

23. A claim may also include a preamble before the elements of the claim. It is my understanding that the preamble does not limit the claim unless it recites essential structure or steps or it is necessary to give life, meaning, and vitality to the claim.

24. With respect to dependent claims, it is my understanding that a dependent claim incorporates all the elements of the independent claim from which the dependent claim depends. I have been informed that for a dependent claim to be infringed, all of the elements of that dependent claim and all of the elements in the claim from which it depends must also be present in the Accused Device.

25. I understand the presence of a dependent claim that adds a particular element gives rise to a presumption that the element in question is not present in the independent claim from which it depends.

26. I understand that system claims, also known as apparatus claims, consist of claim elements that are structural parts that cooperate to achieve some useful result.

27. I understand that for system claims, a person who puts the invention into service, i.e., controls the system as a whole and obtains a benefit from it, is a direct infringer.

28. I understand that method claims, also known as process claims, consist of claim elements that are steps or acts that are performed to achieve some result in the useful or technical arts.

29. I understand that for method claims, a single entity that performs each of the claimed steps of the method, or exercises direction or control over others who participate in the infringing activity, is a direct infringer.

30. I understand that the plaintiff must prove infringement by a preponderance of the evidence. This standard means that it is more likely than not that there is infringement. In other words, the greater weight of the evidence must show that the patent is infringed.

31. I understand that in order for a product to contributorily infringe, the product must be a material part of an infringing system and it must have no substantial, non-infringing use.

**B. Literal Infringement**

32. I understand that a claim is literally infringed when each properly construed claim element reads on the Accused Device or process.

**C. Infringement Under the Doctrine of Equivalents**

33. It is my understanding that when an element of a claim is not literally present in an Accused Device or process, the claim may still be infringed under the Doctrine of Equivalents (“DOE”) if one of ordinary skill would consider the differences between the claim element and the components in the Accused Device or process to be insubstantial. Under one common test for equivalence, an element in the Accused Device is equivalent if it performs substantially the same function, in substantially the same way, to obtain substantially the same result.

34. I understand that each element contained in a patent claim is deemed material to defining the scope of the patented invention and, thus, the DOE must be applied to individual elements of the claim, not to the invention as a whole. I also understand that the application of the DOE cannot be so broad as to effectively eliminate a claim element in its entirety.

35. I further understand that there are several restrictions on the application of the DOE. First, if an Accused Device or process wholly lacks even a single limitation of a claim, it cannot infringe the claim under the DOE. Second, the range of equivalents cannot be so broad as to encompass that which was already known in the prior art. Third, the doctrine of prosecution history estoppel precludes a patentee from reclaiming through equivalents subject matter that was relinquished based on statements or amendments during prosecution. Finally, if a patentee narrowed a claim element by amendment during prosecution for reasons pertaining to patentability, that element is not entitled to any range of equivalents under the DOE unless: (a) the equivalent was unforeseeable at the time of the application; (b) the rationale underlying the amendment bears no more than a tangential relation to the equivalent; or (c) the patentee could not reasonably have been expected to describe the equivalent in question.

36. I understand that under § 112 ¶ 6, a structural equivalent under § 112 must have been available at the time of the issuance of the claim. I further understand that if the structure of the Accused Device incorporates technology developed after the patent was issued, it is, by definition, not a § 112 ¶ 6 structural equivalent and does not literally infringe. However, I understand that such “after-arising” technology may still infringe under the DOE. Thus, I understand that even if an element is found not to be a § 112 ¶ 6 equivalent because it is not equivalent to the structure disclosed in the patent, it may still be found to be an equivalent under the DOE.

37. Based on the information available at the time of this writing, the Accused Devices and systems described in detail in **Exhibit C** all directly infringe the asserted patent. I have

also provided a doctrine of equivalents analysis as an alternative to literal infringement for certain elements of some claims.

**D. Opinion as to Level of Ordinary Skill in the Art**

38. In view of my personal and professional experience and expertise, in my opinion, a person of ordinary skill in the art relevant to the asserted patent as of the priority date of the patent would have the equivalent of a four-year degree from an accredited institution (usually denoted as a B.S. degree) in electrical engineering or the equivalent, and approximately two years of professional experience. Additional graduate education could substitute for professional experience, while significant experience in the field might substitute for formal education.

39. I understand that the attorneys, whose profession it is to draft patent applications, understand that technical details apparent to a person of ordinary skill need not be included in the patent specification. A patent applicant does not need to include in the specification that which is already known to and available to one of ordinary skill in the art because the specification is drafted for one of ordinary skill in the art. An inventor need not explain every detail since he is speaking to those skilled in the art.

**VIII. TECHNOLOGY OVERVIEW**

40. The title of the '467 patent is "Wireless and wired communications, command, control and sensing system for sound and/or data transmission and reception." The '467 patent claims a communication, command, control and sensing system with specific requirements as enumerated in the claims.

41. The '467 patent explains that at the time of the invention, there were prior art devices for remotely controlling appliances using infra-red (IR) signals. Further, there were prior art devices which offered communications using radio frequency (RF) signals. However, at the time of the invention no telephonic device effectively combined these technologies in the manner disclosed and claimed in the '467 patent. *See* '467 patent at 1:17 – 20. The '467 patent discloses and claims a sophisticated communications, command, control and sensing system with many state-of-the-art capabilities and features including, a display device (*see, e.g.*, '467 patent at 4:22, 31; claim 3), replaceable icons associated with desired functionalities (*see, e.g.*, '467 patent claim 5), memory compression (for creating command code sets from parameter sets) (*see, e.g.*, '467 patent at 8:13-16; claim 1),” bi-directional IR (Infrared Frequency) and RF (Radio Frequency) communications capabilities (*see, e.g.*, '467 patent at 1:50-61; claim 2), touch sensitive device creating signals (*see, e.g.*, '467 patent at 21:14-18; claim 11), sound/voice activation and commands (sending and receiving voice commands) (*see, e.g.*, '467 patent at 24:45-47; claim 17), and sensors for measuring physical phenomena (*see, e.g.*, '467 patent at 24:63-67; claim 32), sound and data coupling to receive sound as data signals (*see, e.g.*, '467 patent at 24:52-62; claim 7), among others. *See, e.g.*, '467 patent at 2:66 – 5:67 (“Summary of The Invention”); claims 1-34. FIG. 2 of the '467 patent shows an embodiment of the invention that incorporates many of the technologies disclosed in the '467 patent. The similarity between FIG. 2 of the '467 patent and modern day “smartphones” is quite striking.

## **IX. OPINIONS REGARDING INFRINGEMENT OF THE ASSERTED PATENT AND UNDERLYING ANALYSIS**

42. Based upon my analysis of the aforementioned materials, in view of my personal and professional experience and expertise, it is my opinion that Defendant HTC infringes claims 1,2,3,4,5,6,7,10,14,17,23,26,27,28,29,30,31,32 and 34 of the '467 patent.

43. Exhibit C sets out my claim-element by claim-element infringement analysis which I performed the research for and personally wrote myself, and sets forth with particularity the detailed reasons and bases for my opinions. This chart includes voluminous footnotes, which provide both evidentiary and analytical bases for my opinions. I include these footnotes by reference and have provided within many of them links to the original source material.

44. Included in the footnoted references are references to reverse engineering analysis which I performed to aid in code analysis. The files developed through this reverse engineering analysis are available for download via the following link:

<https://1drv.ms/f/s!Aq2g5MixZD14gp4FMIUI298uPXNt9A>. This link need not be protected as the information contained therein was developed entirely from public sources using public tools. The downloaded pkzip files can be properly accessed by extracting the files to the C: drive of a Windows 7, 8, or 10 computer.

45. Proper viewing of the Doxygen html files requires that the html files reside in their respective doxygen directories (e.g., C:\Ver 2.7.859666\Doxygen\html). The html files may be viewed and navigated using a web browser such as the Google Chrome browser. To facilitate viewing of graphical elements, the graphviz package should also be installed on the PC and C:\Program Files (x86)\Graphviz 2.28\bin should be added to the path.

46. These apk files corresponding to two versions of the Sense TV application (one taken from an HTC One M7 phone and verified as being identical to a publically available version, and the other taken from a public apk file archive) were decompiled using the online decompiler at <http://www.javadecompilers.com/apk>. Doxygen files were generated by Doxygen.exe in accordance with the doxyfile located in the file's respective doxygen folder. The original .apk files from which reverse engineering was performed have been verified as being authentic HTC files by checking the signatures at <https://apkpure.com/apk-signature-verification>.

47. The file demo.zip is the source code for a demo application that engineer Christopher Byler developed as described in the expert infringement report claim charts.

**X. OPINIONS REGARDING OTHER POTENTIAL COMPARABLE TECHNOLOGY/PATENTS/PATENT APPLICATIONS AND ALTERNATIVE NONINFRINGEMENT PRODUCTS AND/OR ADD-ON PRODUCTS INCORPORATING FUNCTIONALITIES CLAIMED IN THE '467 PATENT**

48. I reviewed numerous patent applications and patents<sup>1</sup> that I was asked to review that were the subject of license and/or settlement type agreements. Of these patents/patent applications I found only one to be comparable in part to the inventions disclosed and claimed in the '467 patent. The U.S. 20090069954A1 (application) titled "Control and system notifications using remote access" in part disclosed features that were in the same general field of technology as the inventions disclosed and claimed in the '467 patent. The

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<sup>1</sup> U.S. Patent Nos. 5,276,731, 5,337,039, 5,485,511, 5,515,099, 5,526,037, 5,528,289, 5,568,183, 5,583,565, 5,598,209, 5,623,637, 5,826,026, 6,216,156, 6,297,768, 6,362,599, 6,400,814, 6,476,763, 6,484,035, 6,560,274, 6,687,263, 6,751,237, 6,760,308, 6,917,304, 7,067,757, 7,125,382, 7,188,527, 7,367,044, 7,529,190, 7,710,738, 7,719,981, 7,738,513, 7,995,624, and 5,138,649 and patent applications U.S 2005/0111477, U.S 20020019847A1, 20090069954A1, and U.S 20110282175A1.

U.S. Patent No. 5,138,649 discussed in the background section of the '467 patent relates to background art relating to the inventions disclosed and claimed in the '467 patent. Although the technology disclosed in the '649 patent relates to an apparatus that controls a television and conducts telephone functions through a cable television converter, this technology was not as technologically significant as the sophisticated “smartphone” dynamic functionalities of two way IR and RF communications and sensing capabilities disclosed and claimed in the '467 patent and summarized above.

49. I am not aware of any available, acceptable non-infringing alternatives to the Patent-in-Suit in March 2013, which would have provided the same or similar functionality and benefits as taught by the Patent-in-Suit without infringing the Patent-in-Suit. However, I have reviewed a number of products that incorporate at least in part the IR functionalities disclosed and claimed in the '467 patent that are available in the market as add-on accessories to smartphones that do not have bi-directional IR communication capabilities already integrated.<sup>2</sup> These products include the “Pronto” and the “Logitech Harmony Hub.”

50. One of the shortcomings of the Pronto device is that it does not function with Android devices and it is not clear how well it even functions with Apple devices. To the extent it may function with Apple devices, it has numerous limitations. The Pronto product is a standalone “IR-blaster” type device that communicates via Bluetooth with a paired smartphone. Via the Peel Smart Remote app, the smartphone can apparently transmit commands to the Pronto via RF (Bluetooth), and the Pronto in turn re-transmits the

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<sup>2</sup> In the Accused Devices, a number of components are implicated in the IR capability/functionality disclosed and claimed in the '467 patent including but not limited to the IR transceiver, the microprocessor, various software, and external circuitry.

commands via IR, thereby enabling the user to control TVs and other devices located in the same room or enclosed space via IR communications. The Pronto also includes an IR receiver that works with the Peel Smart Remote App to enable the app to learn IR codes, thereby adding two-way IR functionalities to smartphones that lack this capability.

51. However, the Pronto is limited because it is only able to control devices within the room or enclosure where it is located. This means that to service more than one room, the Pronto device needs to be carried from room to room along with the smartphone and placed properly in line of sight with all of the devices to be controlled there. Alternatively, multiple Pronto devices could be purchased and placed in multiple rooms. This alternative is also problematic in that a user wanting to change rooms would ostensibly have to unpair or disconnect the Bluetooth connection from a first Pronto device in order to pair or connect to another Pronto device anytime a room change is required. In contrast, the accused IR functionality is built into the smartphone and goes where the smartphone goes. The user can easily carry the phone into a room where an IR enabled device resides and simply use it there. In comparison to the Pronto, the Accused Devices therefore have a larger effective communication range and allows the Accused Devices to more conveniently control all IR devices throughout a home.

52. The Logitech Harmony Hub is another product in the market that provides IR functionality similar to that of the Pronto (including IR learning capabilities). Like the Pronto, the Logitech Harmony Hub is limited because it is only able to control devices within the room or enclosure where it is located. This means that to service more than one room, the Logitech Harmony Hub device needs to be carried from room to room along with the smartphone and placed properly in line of sight with all of the devices to be controlled

there. The Logitech Harmony Hub also has Wi-Fi communications capability, with Bluetooth as a backup. The use of Wi-Fi would appear to obviate the Bluetooth related pairing/unpairing problems identified above with regard to the Pronto.

53. In contrast to the Logitech Harmony Hub, the accused IR functionality is built into the smartphone and goes where the smartphone goes. The user can easily carry the phone into a room where an IR enabled device resides and simply use it there. In comparison to the Logitech Harmony Hub, the Accused Devices therefore have a larger effective communication range and allows the Accused Devices to more conveniently control all IR devices throughout a home. Alternatively, multiple Logitech Harmony Hub devices could be purchased and placed in multiple rooms, but at the price point of the Logitech Harmony Hub, this would tend to be a financially disadvantageous alternative.

54. In addition, various universal remote controls are also available in the market that provide the ability to control multiple devices with IR. However, these universal remote controls are not integrated with smartphones nor do they function as add-ons for smartphones (as do the products discussed above) and thus do not have the integrated communication, command, control, and sensing capabilities and functionalities disclosed and claimed in the '467 patent and in the Accused Devices.

## **XI. REVISION OR SUPPLEMENTATION**

55. To the extent that the Court may construe the asserted claims of the asserted patent in a manner that differs from the claim constructions applied above, I reserve the right to revise or supplement my analysis. I also reserve the right to do so to the extent new

information becomes available, the applicable laws change, or as otherwise permitted by the Court or the applicable rules.

**XII. DEMONSTRATIVE EXHIBITS**

56. If called to testify, I may prepare drawings, animations, or videos to illustrate the contents of this report. I may also perform live tests or demonstrations.

**XIII. OPINIONS REGARDING THE MODEL HUGHES REMOTE PHONE, THE 650D MY ONE REMOTE, AND THE MY1REMOTE DEVICES**

57. I have obtained samples of the Model Hughes Remote Phone, the 650D My One Remote, and the My1Remote devices and have carefully studied each of them and their functionalities. Although these devices are marked with U.S. Patent no. 5,802,467, they do not practice any of the claims of the '467 Patent because they do not meet all the elements of any of the claims including an "an infra-red frequency transceiver coupled to said microprocessor for transmitting to said external devices and receiving from said external devices, infra-red frequency signals in accordance with said communications protocols."

Pursuant to 28 U.S.C. §1746, I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed in El Paso, TX on 3/30/2018.

By:



Roy A. Griffin III, P.E.